

III. Transition pressure rise

1. Experiment background

- Transition pressure rise affected experiment background in d- Au run.
- In Run-4 Au-Au operation, transition pressure rise was also relevant at highest intensities.
- It is of concern in **Cu-Cu run** because of $96e9$ to $136e9$ Au equiv. intensities.

2. Experience in Run-3 and Run-4

- Transition pressure rise is related to total beam charge intensity.
- Not tightly related to bunch spacing, ion species and beam loss.
- Might be caused by halo scraping associated with beam momentum spread.

3. Plan for Run-5

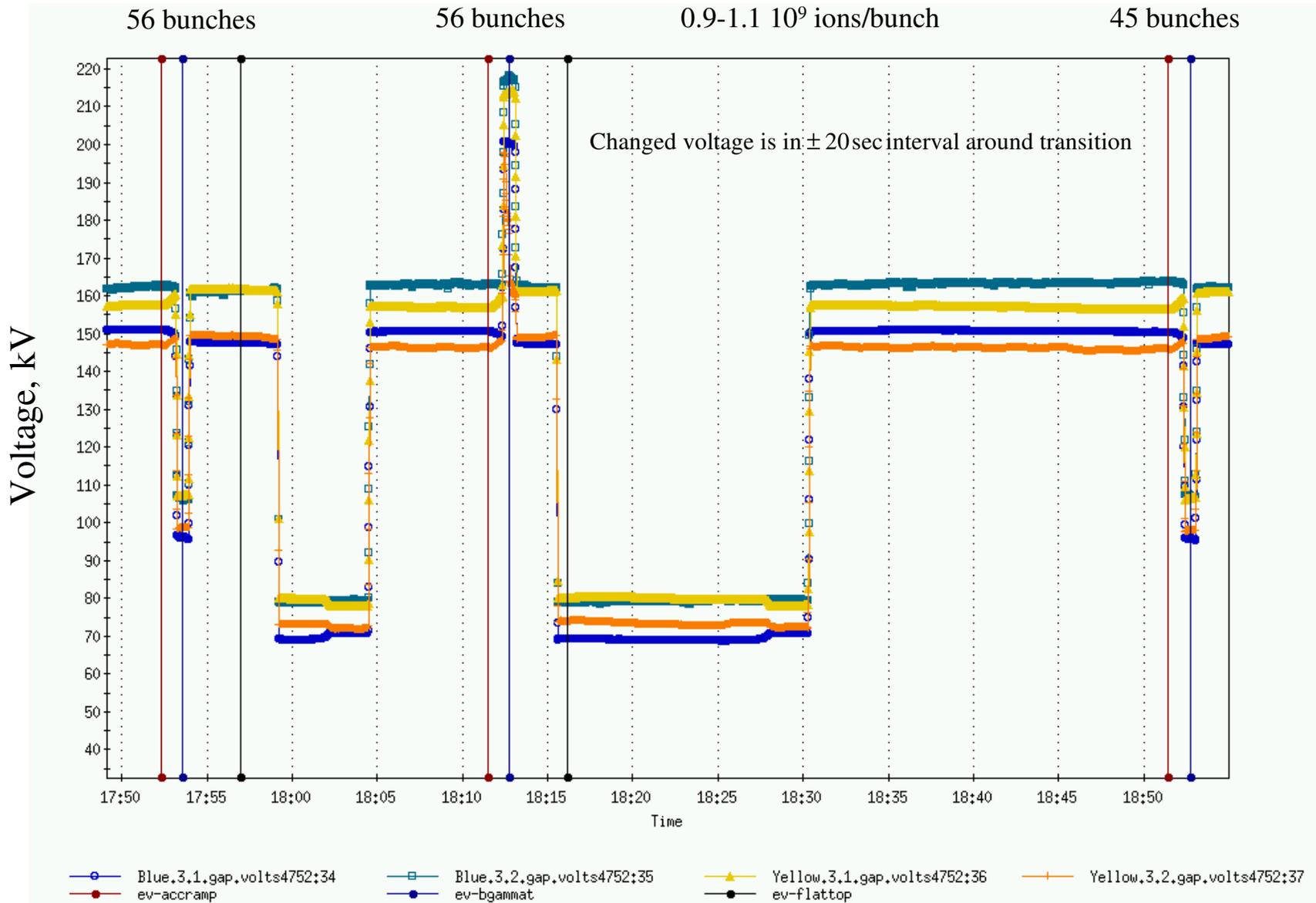
- Copper operation may provide better understanding.
- Further study, such as the **RF voltage** effect?

(from S.Y.Zhang's
BeamEx Workshop talk)

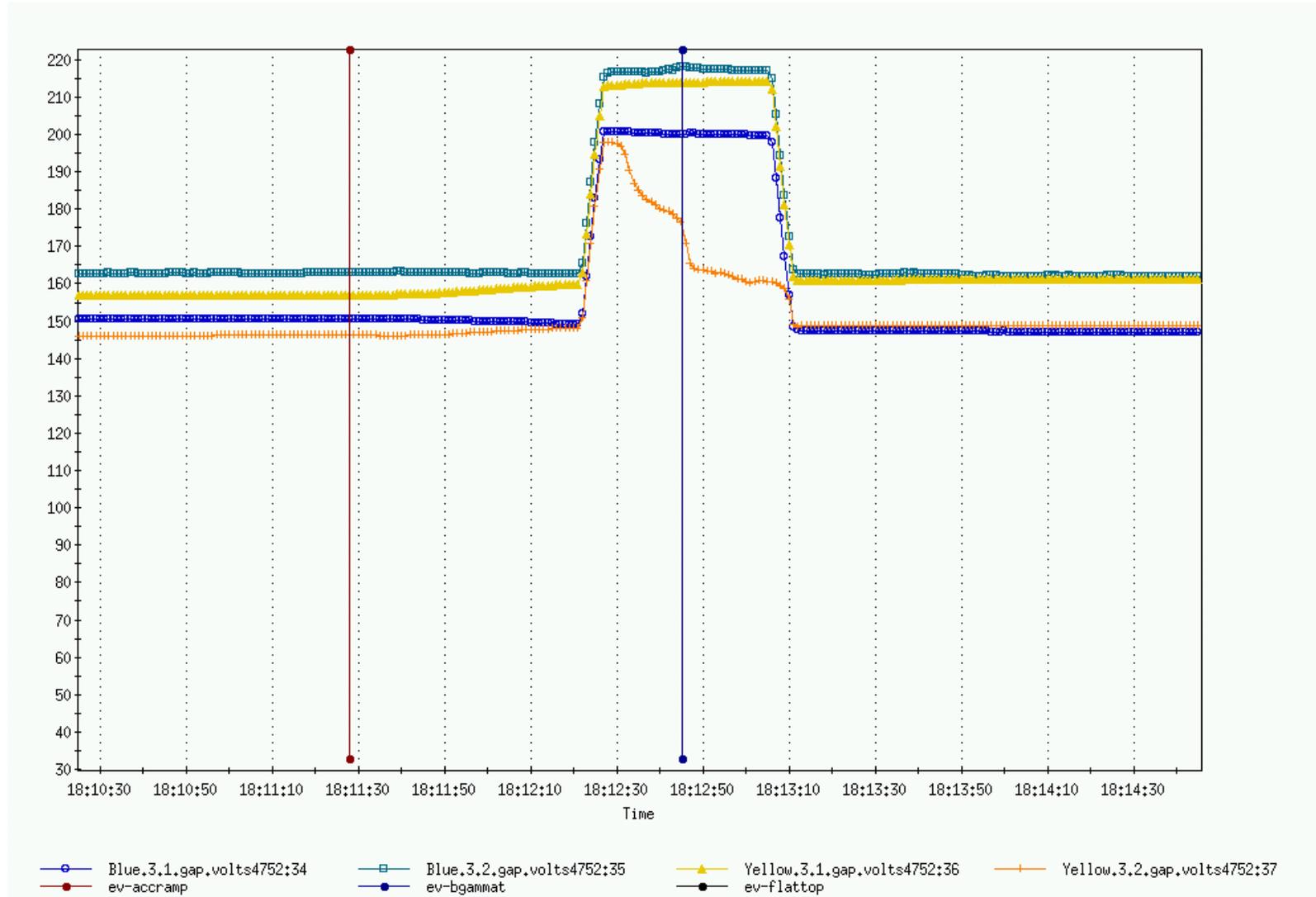
Momentum spread or peak
current ?

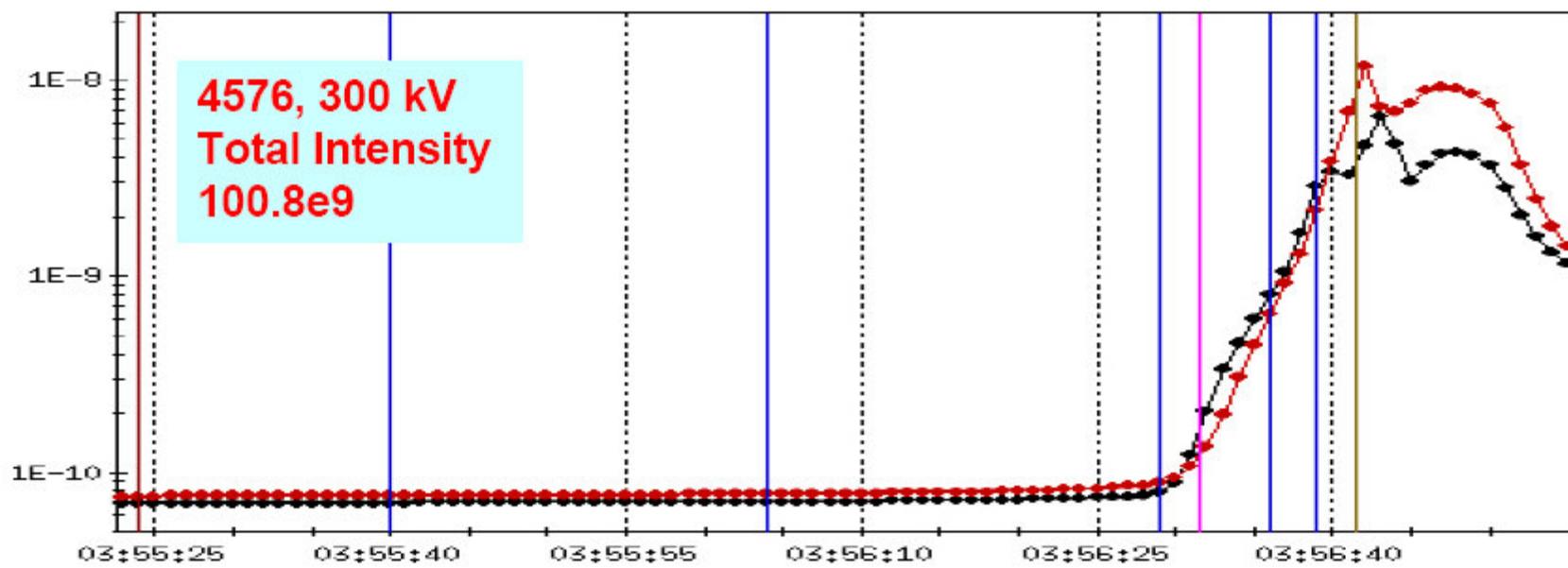
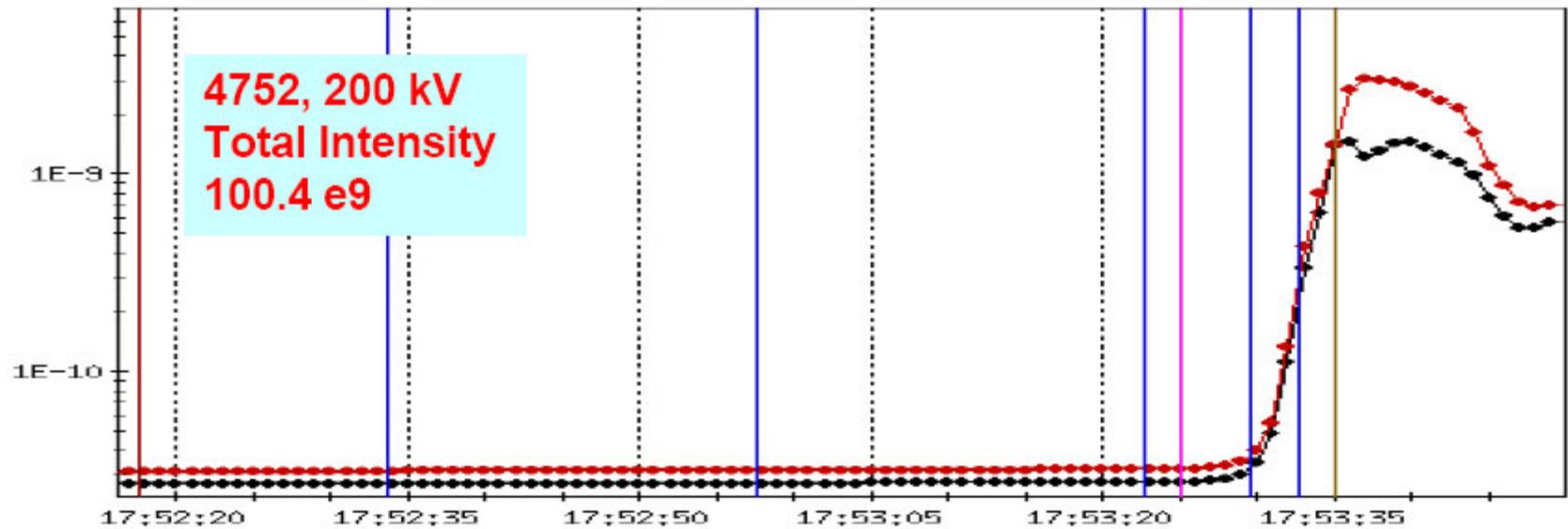
3 ramps with changed voltage around the transition to look at pressure rise there

Researchers: M. Blaskiewicz, U. Iriso-Ariz, N. Malitsky, C.Montag, V. Ptitsyn, J. Wei, S.Y Zhang



One of Yellow cavities on higher voltage ramp did not behave as required





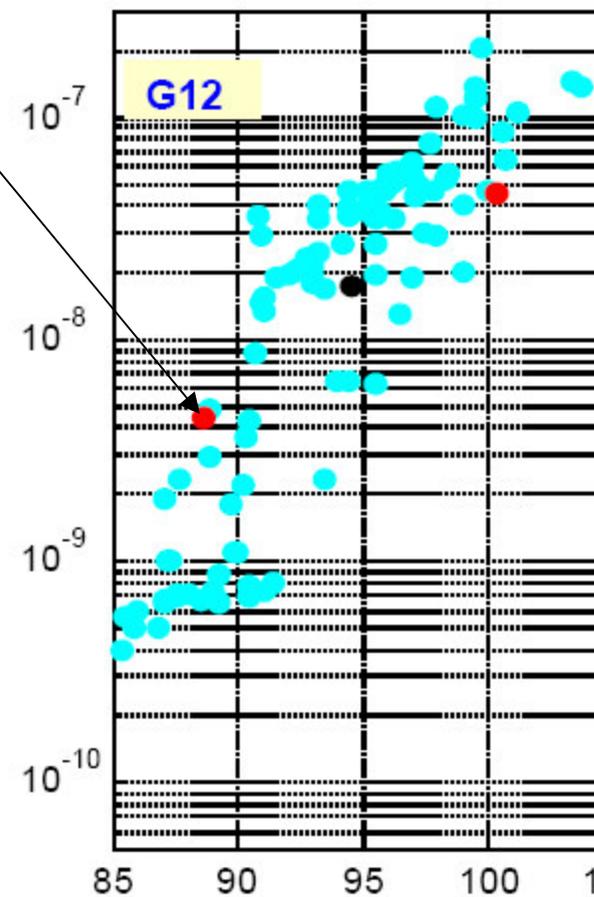
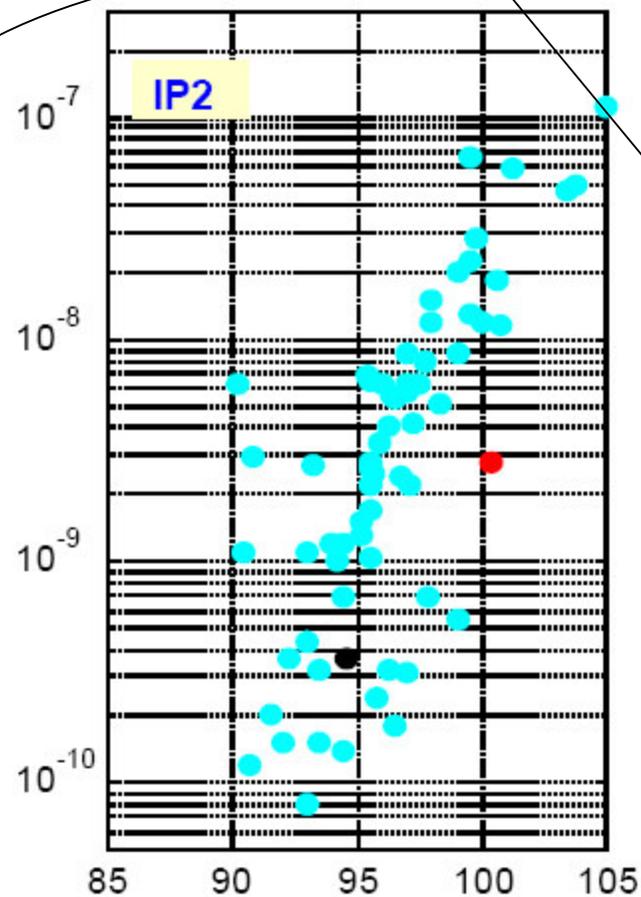
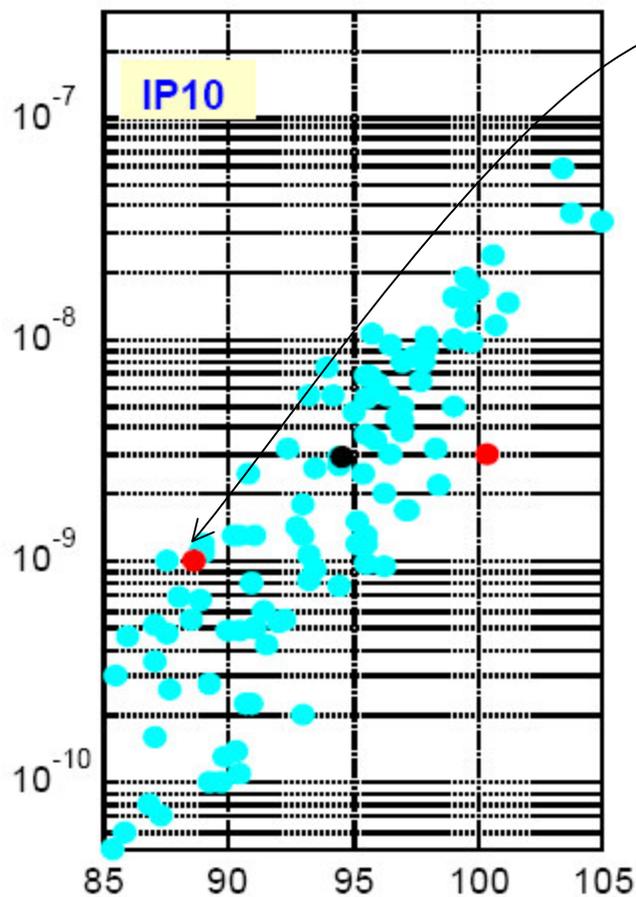
IP10 pressure rise. For same intensity, lower voltage at transition seems help.

Transition Pressure Rise Study

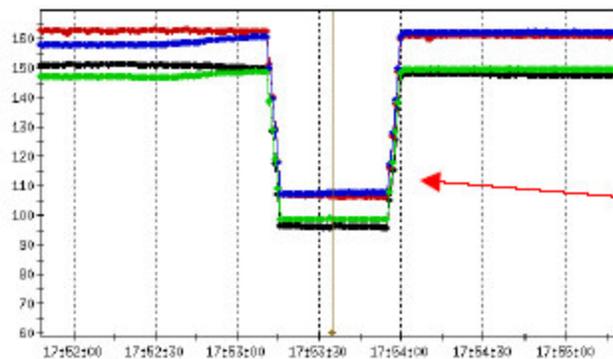
longitud. emittance

SY Zhang

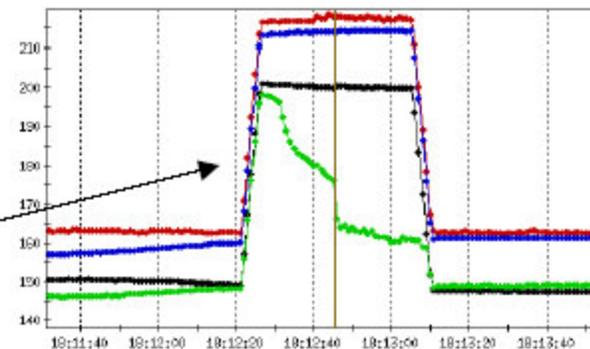
3-12-04



Total intensity, $1e9$ Au ions



- Cyan: 300 kV at Tr.
- Red: 200 kV at Tr.
- Black: 400 kV at Tr.



Total voltage=300kV

Total voltage=200kV

